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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/614,627	07/07/2003	Philip D. Nguyen	2002-IP-008754U1	7836

7590 06/28/2005  
Robert A. Kent  
Halliburton Energy Services  
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Duncan, OK 73536

EXAMINER

SUCHFIELD, GEORGE A

ART UNIT	PAPER NUMBER
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3676

DATE MAILED: 06/28/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	Application No.	Applicant(s)	
	10/614,627	NGUYEN, PHILIP D.	
	Examiner	Art Unit	
	George Suchfield	3676	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 14 March 2005.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-56 is/are pending in the application.
- 4a) Of the above claim(s) 23-56 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-8, 10-17 and 20-22 is/are rejected.
- 7) ☒ Claim(s) 9, 18 and 19 is/are objected to.
- 8) ☒ Claim(s) 1-56 are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
     Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
     Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)                        | 4) <input type="checkbox"/> Interview Summary (PTO-413)                     |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)               | Paper No(s)/Mail Date. _____  |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date <u>3/14/05; 2/14/05</u> .  | 6) <input type="checkbox"/> Other: _____                                    |

Art Unit: 3676

1. Restriction to one of the following inventions is required under 35 U.S.C. 121:
  - I. Claims 1-22, drawn to a method of fracturing a subterranean formation, classified in class 166, subclass 280.2.
  - II. Claims 23-56, drawn to a coated particle and coating composition for coating, classified in class 428, subclass 407.

The inventions are distinct, each from the other because of the following reasons:

2. Inventions I and II are related as product and process of use. The inventions can be shown to be distinct if either or both of the following can be shown: (1) the process for using the product as claimed can be practiced with another materially different product or (2) the product as claimed can be used in a materially different process of using that product (MPEP § 806.05(h)). In the instant case the coated particulate could be used in processes or applications other than the fracturing process of the Group I invention, for example, it could be used in a gravel packing, drilling or earth treatment process, such as for soil stabilization or soil remediation.
3. Because these inventions are distinct for the reasons given above and have acquired a separate status in the art as shown by their different classification, restriction for examination purposes as indicated is proper.
4. Because these inventions are distinct for the reasons given above and have acquired a separate status in the art because of their recognized divergent subject matter, restriction for examination purposes as indicated is proper.
5. During a telephone conversation with Robert A. Kent on June 16, 2005 a provisional election was made without traverse to prosecute the invention of Group I, claims 1-22.

Art Unit: 3676

Affirmation of this election must be made by applicant in replying to this Office action. Claims 23-56 stand withdrawn from further consideration by the examiner, 37 CFR 1.142(b), as being drawn to a non-elected invention.

6. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

7. Claim 20 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 20, in calling for the gel breaker to be added to added to the coating composition "just prior to pumping the pre-coated proppant particles down hole" is deemed to conflict with parent claim 1 wherein the complete coating composition is emplaced on the proppant particles prior to any mixing with the fracturing fluid and pumping into the well bore.

8. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. See *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and, *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent is shown to be commonly owned with this application. See 37 CFR 1.130(b).

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

9. Claims 1-7, 12, 13, 16, 17 and 21 are rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1-32 of U.S. Patent No.

Art Unit: 3676

6,887,834. Although the conflicting claims are not identical, they are not patentably distinct from each other because the process of pending claims 1 and 22 can be construed broadly enough, e.g., in view of the language “A method ... comprising the steps of” to encompass the additional limitations of the patent claims, such as the recited resin solvent and/or surfactant components of patent claim 1. Otherwise, both pending claims 1 and 22 and the patent claims 9-12 and 21-24 recite the use of a gel breaker in the resin composition coated onto the proppant particulates.

The steps and/or components and ranges thereof set forth in the pending dependent claims 2-7, 12, 13, 16, 17 and 21 are deemed encompassed by the corresponding components and ranges recited in the patent claims. For example, ‘834 claim 2 calls for a resin composition range of “40% to about 75% by weight; the ‘834 claims 12 and 24 call for a gel breaker concentration of “0% to about 3%”, which falls within applicant’s range of “0.1% to about 10% by weight” in claim 16.

10. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

11. Claims 1-9, 12-17, 21 and 22 are rejected under 35 U.S.C. 102(e) as being anticipated by Nguyen et al (6,887,834).

Art Unit: 3676

The applied reference has a common inventor with the instant application. Based upon the earlier effective U.S. filing date of the reference, it constitutes prior art under 35 U.S.C. 102(e). This rejection under 35 U.S.C. 102(e) might be overcome either by a showing under 37 CFR 1.132 that any invention disclosed but not claimed in the reference was derived from the inventor of this application and is thus not the invention “by another,” or by an appropriate showing under 37 CFR 1.131.

Nguyen et al discloses a process of forming one or more fractures in a subterranean zone utilizing a gelled fracturing fluid containing proppant particles which are pre-coated with a coating composition comprising a hardenable resin, a silane coupling agent and a gel breaker. Upon emplacement of the coated proppants into the fracture(s), the resin component is hardened or set by the heat of the formation such that the proppants are consolidated to form a permeable pack, as called for in independent claims 1 and 22.

The steps and/or components and ranges thereof set forth in the pending dependent claims 2-7, 12, 13, 16, 17 and 21 are deemed encompassed by the corresponding components and ranges disclosed in Nguyen et al (note col. 3, line 60 - col. 4, line 8) including a resin composition range of “40% to about 75% by weight”; a gel breaker concentration of “0% to about 3%”, which falls within applicant’s range of “0.1% to about 10% by weight” in claim 16.

As per claims 7, 8, 14, 15 it is noted that Nguyen et al (col. 4, lines 45-56) may employ an oxidative and/or delayed breaker in lieu of the hydrolyzable ester comprising an encapsulated sodium bisulfate breaker. With respect to the particular encapsulating materials recited in claim 15, official notice is taken that such encapsulating materials are deemed well known or

Art Unit: 3676

conventional in the fracturing art to which the invention is directed, and are thus encompassed by the method of Nguyen et al.

12. Claims 1-8, 12, 13, 16, 17, 21 and 22 are rejected under 35 U.S.C. 102(b) as being anticipated by Todd et al (6,311,773).

Todd et al (note col. 3, line 47 – col. 4, line 54) discloses a process of forming one or more fractures in a subterranean zone utilizing a gelled fracturing fluid containing proppant particles which are pre-coated with a coating composition comprising a hardenable resin, a silane coupling agent and a gel breaker. Upon emplacement of the coated proppants into the fracture(s), the resin component is hardened or set by the heat of the formation such that the proppants are consolidated to form a permeable pack, as called for in independent claims 1 and 22.

As per claim 3, note that Todd et al discloses use of both a furan resin and a phenolic resin, and further indicates such resins may be utilized in admixture.

The steps and/or components and ranges thereof set forth in the pending dependent claims 4-8, 12, 13, 16, 17 and 21 are deemed encompassed by the corresponding components and ranges disclosed in Todd et al (note col. 5, lines 15 - 64) including a resin composition range of “40% to about 80% by weight”; a gel breaker concentration of “1% to about 12% by weight”, which falls within applicant’s range of “0.1% to about 10% by weight” in claim 16.

13. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

14. Claim 10 is rejected under 35 U.S.C. 103(a) as being unpatentable over Todd et al (6,311,773) as applied to claim 1 above, and further in view of Dewprashad et al (5,609,207).

Dewprashad et al discloses a process of fracturing a subterranean formation with a coated proppant wherein a particular enzyme breaker comprising, e.g., cellulase or hemicellulase.

Accordingly, it would have been obvious to one of ordinary skill in the art to which the invention pertains, to similarly employ one of the particular enzyme breaker agents, such as cellulase or hemicellulase of Dewprashad et al (col. 7, lines 26-47), as the enzyme breaker in the hardenable resin composition in the fracturing method of Todd et al, in order to tailor the enzyme to the particular gelling agent of the fracturing fluid injected in the process of Todd et al

15. Claim 11 is rejected under 35 U.S.C. 103(a) as being unpatentable over Todd et al (6,311,773) as applied to claim 1 above, and further in view of Mondshine (5,253,711).

Mondshine (col. 2, line 50 – col. 3, line 19) discloses use of a delayed and a temperature-activated breaker compound in a fracturing fluid comprising alkali earth metal or zinc peroxide.

Accordingly, it would have been obvious to one of ordinary skill in the art to which the invention pertains, to employ an alkali earth metal or zinc peroxide breaker as the temperature-activated breaker in the process of Todd et al, as taught by Mondshine, in order to provide a breaker component of greater effectiveness and stability, such as in an alkaline fracturing fluid.

16. Claims 14 and 15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Todd et al (6,311,773) as applied to claim 1 above, and further in view of Nguyen et al (6,887,834).

Nguyen et al, applied above, teaches that an encapsulated breaker may be employed in the hardenable resin composition coating on the proppant particles in the fracturing and propping process in lieu of the hydrolyzable ester breaker.



Accordingly, it would have been obvious to one of ordinary skill in the art to which the invention pertains, to employ an encapsulated breaker compound as the gel breaker included in the resin coating on the proppant particles in the process of Todd et al, as taught by Nguyen et al, in order to prevent premature breaking of the fracturing fluid in contact with the coated proppants.

As noted above, with respect to the particular encapsulating materials recited in claim 15, official notice is taken that such encapsulating materials are deemed well known or conventional in the fracturing art to which the invention is directed, and are thus encompassed by the encapsulated breaker of Nguyen et al.

17. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Other references cited disclose methods of fracturing subterranean formations and emplacement of proppant particles in the fractures.

18. Claim 20 would be allowable if rewritten to overcome the rejection(s) under 35 U.S.C. 112, 2nd paragraph, set forth in this Office action and to include all of the limitations of the base claim and any intervening claims.

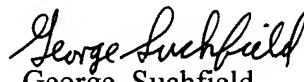
19. Claims 9, 18 and 19 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Art Unit: 3676

Any inquiry concerning this communication or earlier communications from the examiner should be directed to George Suchfield whose telephone number is 571-272-7036. The examiner can normally be reached on M-F (6:30 - 3:00).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Brian Glessner can be reached on 571-272-6843. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

  
George Suchfield  
Primary Examiner  
Art Unit 3676

Gs  
June 21, 2005